JDISS SERVER & JDISS CLIENT SEGMENTS FOR GCCS 2.1/2.2 SYSTEM ADMINISTRATION MANUAL

for the

Joint Deployable Intelligence Support System
JDISS Server Segment Ver 2.0.3
JDISS Client Segment Ver 2.0.4

July 29, 1996

Prepared by:

Office of Naval Intelligence - JDISS PMO
ONI-7JD
Suitland, Maryland

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Technical Review / Date Quality Review / Date

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Management Review / Date

JOINT DEPLOYABLE INTELLIGENCE SUPPORT SYSTEM (JDISS)

JDISS SERVER & JDISS CLIENT SEGMENTS FOR GCCS 2.1/2.2

JDISS Server Segment Ver 2.0.3
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1. INTRODUCTION

1.1 Purpose

This document describes the JDISS Version 2.0 (V2.0) system design and configuration specifications. Users of this document are anticpated to be U&S Command / Agency system administrators and / or GCCS / JDISS technical support representatives. These individuals are responsible for configuring and maintaining the system configuration either when fielded or within their in-garrison infrastructure.

1.2 JDISS Overview

The JDISS Program integrates and packages a standard family of applications that are commonly used throughout the joint intelligence community. From its beginnings as a DODIIS infrastructure program, JDISS has provided a standard deployable workstation to guarantee interoperability across theatre and service boundaries. To extend intelligence interoperability to GCCS, JDISS provides a server and client segment which contain the same software packages used in the standard JDISS 2.0 deployable workstation. This provides basic interoperability between GCCS and JDISS for the intelligence mission in GCCS. In addition to providing interoperability, the JDISS Server segment contains certain organic intelligence functions, such as COTS software to display and manipulate imagery and terminal emulation software to facilitate linkups with intelligence servers. The JDISS Segments also make heavy use of the GCCS Netscape segment to interface with the growing numbers of Intelink and imagery servers that have Web interfaces. JDISS Corporate services expand the array of capabilities to meet almost any intelligence requirement. These are optional COTS and GOTS applications that plug into the JDISS Server and / or Client segments.

1.3 Document Overview

Sections herein provide the following information:

- JDISS standard software configuration under GCCS 2.1 or 2.2.

- JDISS system design specifications, including directory and file structures, disk partitioning, kernel configuration for standard peripherals, and system administration tools.

1.4 Configuration Management Responsibilities

1.4.1 System Administration Document Control

This document provides UNIX system instructions and communications device connectivity procedures and is intended for use by U&S Command / Agency system administrators and technical support representatives. These individuals are responsible for installing and maintaining the JDISS hardware and software configuration and will have significant experience in UNIX system administration. This document should be controlled by the Command and its distribution limited to only those individuals responsible for configuring the system. Once configured, field system administrators will maintain the system as fielded and should not need to modify the JDISS baseline or any additional functionality added by the Command. The Command must be responsible for appropriate distribution of this specification as part of its operational plans for fielding JDISS systems.

1.4.2 JDISS Software Baseline Control

The JDISS Program Management Office (JDISS PMO) has the responsibility for controlling the JDISS system baseline. The software baseline and documentation are controlled through a configuration management process documented in the JDISS Program Configuration Management Plan (CMP). An essential part of the CM process is the JDISS Configuration Control Board (CCB) through which the user community will recommend changes and enhancements to the JDISS hardware and software baselines. The CCB is responsible for prioritizing and approving recommended changes to the baseline. JDISS regional support representatives as well as U&S Command representatives will maintain the JDISS-approved configuration as new versions are released with enhanced capabilities integrated and controlled by the JDISS CCB.

1.5 Document Conventions

The following conventions are used throughout this document:

- Text displayed on the screen or directory / file references will be in courier font:

```
extern struct streamtab ldtrinfo.
```

- Commands which must be entered by the user will be in bold courier font:

`vi  files.cmn.`

- Text which requires a substitution by the user will be in italics courier font surrounded by double brackets:

<<machine name>>.

- Text which requires a substitution by the user which must be surrounded by quotes will be in italic courier font in quotes surrounded by double brackets.

<<"enter a descriptive statement here">>

1.6 Applicable Documents

Information in the following documentation may be applicable to or referenced in certain procedures in this document. System Administrators or other personnel using this document should have them available for reference.

1.6.1 Government Documents

Configuration Management Plan for the Joint Deployable Intelligence Support System (JDISS), JDISS Program, March, 1994.

DOD-STD-2167A, Defense System Software Development, Washington DC 20301, 29 February 1988.

MIL-HDBK-287, A Tailoring Guide for DOD-STD-2167A, Defense System Software Development, Washington DC, 11 August 1989.

Joint Deployable Intelligence Support System (JDISS) Version 2.0 Computer System Reference Manual, May 31, 1995.

1.6.2 Commercial Documents

SunOS Reference Manual, SUN Microsystems, Inc., 1994.

X.desktop User's Guide, Version 3.5, IXI Ltd., 1992.

Applix Version 3.2 User's Guides (Mail, Word, Graphics, Spreadsheet, Filter Paks), Applix, Inc., 1994.

ELT Series User Guide, Version 2.0 (ELT 2000), Paragon Imaging, Inc., 1994.

OpenConnect/Presentation Services OC/TN3270 User's Guide, OpenConnect Systems, Inc., March 1992.

NeWSprint Installation and Administration Guide, SUN Microsystems, Inc., 1994.

X.desktop; IXI Limited Version 3.5, 4th edition, 1992.
Vision Park, Cambridge, England CB4 4ZR
Capital City Marketing, 301-365-9069

Interleaf, Version 6 P/N 79031-0009/b, 3rd printing, August 1993.
Prospect Place, 9 Hillside Avenue, Waltham, Mass. 02154
Phone: 617-290-0710

Applix Version 3.11, October, 1993 (Mail), January 1994 (Spreadsheets)
112 Turnpike Road, Westboro, MASS. 01581-2833
Phone: 1-800-8APPLIX, 508-870-0300, 508-366-9313 (F)

Synchronize, Version 1.2 P/N 5001000-006, 1992.
Crosswinds Technologies, Inc.

ELT Series User Guide, Version 1.04 (ELT2000), 1994.
Paragon Imagining, 406 Sarasota Quay, Sarasota, FL. 34236
HQRS 508-251-7755

"Understanding GIS: The ARC/INFO Method", Revision 6, 1993.
Environmental Systems Research Inc., 380 New York Street, Redlands, CA. 92373

CorelDRAW, Version 3.0
1600 Carling Avenue, Ottawa, Ontario, Canada, K1Z 8R7
Support 613-728-8200 x-1867
IVAN 613-728-0826 x-3080

SPARCprinter, Revision A, P/N 800-4477-11 January 1991.
SUN Microsystems, 2550 Garcia Avenue, Mountain View, CA. 94043-1100

SPARCprinter II, March 1994.
SUN Microsystems, 2550 Garcia Avenue, Mountain View, CA. 94043-1100

ScanMaker II, Microtek, 1st edition, June 1992.
Microtek Labs, Inc. 680 Knox Street, Torrance, Ca. 90502
Phone: 213-321-2121 310-538-1193(F)

NewsPrint, Version 2.

Collage, Version 1.3.

VideoPix, February 1991.
SUN Microsystems, 2550 Garcia Avenue, Mountain View, CA. 94043-1100

Kodak, XL7700 printer, 1990.

Rochester NY. 14650

HP-UX, HP9000 workstations, P/N B2910-90001, Edition 1, August 1992.
Hewlett Packard Company, 3404 Each Harmony Road, Fort Collins, CO. 80525-9988

Canon CJ10, 1992.
One Canon Plaza, Lake Sucess, NY. 11042

FlexLM, End User Manual
Globetrotter Software, Campbell, Ca. 95008
(408) 370-2800

2. JDISS VERSION 2.0 SOFTWARE CONFIGURATION

This section provides detailed information on JDISS V2.0 applications, utilities, system settings and directory structures.

2.1 JDISS Software Applications Overview

The JDISS V2.0 software suite consists of both commercial and government software and utilities integrated under the present DoDIIS Common Desktop. At present, JDISS provides a core set of segments that bring a basic level of intelligence functionality to GCCS plus interoperability with standalone / deployed JDISS 2.0 workstations. In GCCS 2.0, JDISS came in a single large segment. In GCCS 2.1, the JDISS segment was divided into a client and server pair of segments, greatly reducing the storage requirements for GCCS client workstations. In GCCS 2.2, the JDISS capability for GCCS comes in four segments: JDISS Server, JDISS Client, and two optional segments - IPA Client and JDISS Video. In addition, the JDISS server segment has been reduced in size as functions were removed which overlapped the GCCS COE. This trend of adding new functional JDISS segments while breaking up the old will continue as JDISS migrates to the Defense Information Infrastructure (DII). Ultimately all of the optional products and corporate services available for the standalone JDISS workstation will become available to GCCS when both systems are DII-based. JDISS 3.0 will in effect be a family of DII COE and JDISS mission applications segments.

2.1.1 JDISS Core Commercial Off-the-Shelf (COTS) Software

The following COTS products are part of the core JDISS 2.0 configuration. These are distributed in the JDISS Server Segment. The JDISS PMO activates licenses upon proof of purchase of COTS products. Typically these are purchased off the DIA SASS contract (See Section 2.5).

X.desktop Version 3.5 (IXI Ltd.) provides the desktop environment for initiation of JDISS applications. Applications (and utilities) are activated via icon selection from application windows. The hierarchy of windows presented to the user has been designed by the DoDIIS community to provide a common user interface for analysts as they rotate between theaters.

(1) Calculator - provides a standard calculator capability.
(2) Screen Lock - provides the user with the ability to password lock their monitor screen display.
(3) Trash - provides an icon-based "drag and drop" feature for a user to delete files from the workspace.

(4) Clock - provides a user-defined clock interface. Provides multiple time zones and a world map display.

(5) Home directory display - provides the user an icon-based display of the home directory file content.

(6) Clipboard is a temporary "holding area" for text-only material copied from applications such as Applix Word. It provides a cut-and-paste capability for text transfer between windows.

TN3270 with API and Graphics Option Version 4.15 (OpenConnect Systems, Inc.) is a terminal emulation package which allows users on a UNIX platform to perform standard IBM 3270 terminal functions. It provides "native" access to IBM mainframes (e. g., LANTCOM IDHS, PACOM IDHS, SAFE) for user access to host databases, E-mail systems, and other host applications on which they have accounts.

The *ELT-2000* Version 2.0 (Paragon Imaging, Inc.) software package provides the secondary imagery receipt, processing, and dissemination capabilities on JDISS. It allows the user to display and process images of any size subject to memory limitations and CPU speed of the workstation. Image manipulation functions include zoom, pan, and scroll as well as image rotation by variable degrees. ELT-2000 supports non-destructive annotation with defined graphic symbols and freehand drawing. Image region of interest processing as well as subimage creation can be accomplished. Subimages can be saved and processed or they can be cut, copied, and pasted to any image. A text message can be linked with individual images or subimages with no limit on length via a provided text editor.

HIPPIE (High Performance Peripheral Imagery Enabler) Version 3.10 (Vividata Inc.) is a product containing multiple software drivers to allow a variety of COTS printers and scanners to interface to the JDISS workstation. This package is also marketed as Paragon Imaging's ImageExchange PIX product.

Synchronize Version 1.3.01A (Crosswinds Technology Inc.) provides a network calendar function. Users are allowed to share a calendar, thereby easing scheduling conflicts and increasing awareness of other users events and itineraries. Note: This software resides physically in both the JDISS Server and Client segments.

Interleaf World Viewer Version 2.01 (Interleaf Inc.) provides a viewer tool to display hyperlinked documents created with Interleaf electronic publishing software.

Flexlm Version 3.0 is the basis of the license manager that JDISS uses to control the use of software integrated into the JDISS baseline.

DesktopCHATTER Version 2.0.2 (Paragon Imaging) provides chatter functionality between users on different hosts on a network. It provides a graphical user interface to

the standard Unix talk function as well as chatter to other protocols on Unix platforms. Chatter protocols supported include otalk, ytalk, ntalk, and Euro-DITDS chat.

Adobe Acrobat is a graphics file format conversion package which supports creation and viewing of Adobe Portable Document Format (PDF) documents.

2.1.2 JDISS Core Government Off-the-Shelf (GOTS) Software

The following GOTS applications are licensed at no cost to government entities. They are distributed as core products in the JDISS Server and Client segments.

The *Alert* function is a JDISS-to-JDISS function that enables a user to send a high priority message to a remote JDISS user on the network. Capabilities include sending messages as registered alerts for receipt confirmation.

Send_File is a capability which allows a JDISS user to send files to another JDISS without requiring the user to have an account on the destination machine. Files sent are stored in the `/usr/tmp` subdirectory of the destination machine when a user is not logged in. If a user is logged in, a pop-up message appears which notifies the operator there that a file has arrived and asks where to store it. The originating user is notified whether or not the file arrived successfully.

JPings (JDISS Pings) is a basic communications tool to check whether another workstation is up -- or alive -- on the network.

LLNLXFTP Version 2.0.3 (Lawrence Livermore National Laboratory's "File Transfer Protocol") application is a file transfer capability that enables an analyst to send files to and receive files from a remote machine on the network. The user must have an account on the remote machine to accomplish the file transfers or the user can transfer files to the shared directories using the anonymous account as a guest.

Intelink is an implementation of Web technology on government networks (e.g. JWICS, SIPRNET, ADNET, MILNET, etc.). JDISS currently uses the GCCS Netscape segment to access Intelink. Netscape is a software package that allows a user to navigate to different Web sites and to browse html-formatted documents.

JVOX (JDISS Secure Voice Exchange) is an audio transmission capability developed at the Naval Research Laboratory. The product is implemented to digitize and compress voice, packetize and send voice packets to a user on another host on the network. The capability is essentially the same as currently available voice transmission tools on the Internet. Workstation requires a microphone and 9.6Kbps connectivity or better.

JUIC (Joint Universal Imagery Client) provides Web browser access (via the Netscape segment) to various imagery servers, e.g. 5D and IPA servers.

JDISS Embedded Support (JES) provides an on-line JDISS training and help capability for users. It has been structured using the hypercard COTS software product MetaCard (Version 1.4) and provides training using multi-media presentations for users.

DOS Tools provides for import and export of files on DOS-formatted floppy disks, and also provides a DOS formatting capability for floppy disks.

CDROM reader provides interface software for JDISS to mount filesystems from CDROM.

JDISS Manager provides the interface for the JDISS system administrator to configure access to remote hosts for interaction via JDISS Alerts, Send File, FTP, Pings and Chatter functions. It also controls whether terminal emulation is required with a remote host, and what type of terminal emulation to use, e.g. TN3270, VT100, or NVDET.

Shared Target is a "drag and drop" function on the desktop window. By dragging a file from one directory window and dropping it on the Shared Target icon, the user is copying that file to the Shared Directory. The file is then available to other users to view.

Print Target provides the user an ability to print a file by "dragging and dropping" its icon onto a target icon.

Print Screen provides a capability to print a hard copy of the user selected monitor screen display.

Save Screen allows the user to save a screen image in an X Windows dump (.xwd) format to a file in the user's home directory.

Backup / Restore provides a means for the user to back-up and restore both his `home` and `share` directories.

System Load provides a tool for monitoring system CPU usage.

Time Zone Clock is a standard time zone clock displayed on a world map.

Version lists COTS software and corresponding versions loaded on the system; functions as a prototype tool for future use in electronic upgrading.

2.1.3 JDISS Corporate Services for GCCS

JDISS Corporate Services are additional functions or plug-in segments that are installed in conjunction with either the JDISS Server or JDISS Client segment. Corporate Services

are typically GOTS applications that are sponsored by other government programs which have gained wide acceptance in the joint intelligence community. The JDISS program maintains packaging control of certain applications that have widespread use in mulitple theatres; these are called Registered Corporate Services. Theatre-unique and site-unique applications are usually created and maintained externally from the JDISS program, although these can evolve to become Registered Corporate Services. Repackaging involves conversion of an application into a segment and integratation to make it work smoothly with the COE and other segments. Some optional COTS products are also repackaged as Corporate Services.

Currently, JDISS Corporate Services segments must be installed specifically on the workstation that requires the functionality. There are no "client/server pairs" of Corporate Services segments. In other words, Corporate Services segments can be installed, and plug in identically, with either the JDISS Client Segment or the JDISS Server Segment. As of this writing, the following JDISS Corporate services have been ported to the GCCS 2.1/2.2 environment:

IPA (Imagery Product Archive) is a client interface to Image Product Archive (IPA) servers. To use it, one needs an account (userid and password) on an IPA imagery servers. It allows a user to query an IPA server and download or upload image files. This function is packaged as the JDISS IPA Segment.

JDISS Video provides device driver and user interface support for use of a Parallax video card. The segment allows a user to view live NTSC video feeds and extract frame grabs and video clips. It also supports viewing and manipulation of Motion-JPEG and MPEG video files. Frame grabs can be stored in a variety of image formats including NITF 2.0, TIFF, PCX, SunRaster, and others. This function is packaged as the JDISS Video Segment.

Xmit provides a user interface to TACO2 - TActical COmmunications. The TACO2 protocol is used to transfer files in low-speed half duplex communications environments such as UHF and EHF links. This function requires installation of the GCCS ICS (Imagery Communications) Segment.

Image Viewer is a GOTS tool for display and manipulation of image files. An icon for this application appears under JDISS Corporate Services. This function requires installation of the GCCS Image Viewer (IVWR) Segment.

ITS Target is a drop target which is used as a convenient method to "drop" an image file into the ITS (Image Transformation Services) imagery database. This drop target icon appears under JDISS Corporate Services. This function requires installation of the GCCS ITS Segment.

Imagery Print Services provides image file format conversion services plus an interface to high-end printer driver support. An icon for this application appears under JDISS

Corporate Services. This function requires installation of the GCCS Imagery Print Services (IPS) Segment.

IPS Print Target is a drop target which is used as a convenient method to "drop" an image file to be printed via the IPS Segment. This drop target icon appears under JDISS Corporate Services. This function requires installation of the GCCS IPS Segment.

2.1.4 Future JDISS Corporate Services for GCCS

The applications listed below are a snapshot of the many Corporate Services that are available for the standalone JDISS workstation. This list changes regularly with new applications being added to meet customer requirements and legacy applications removed when no longer needed. Work is underway to port most JDISS Corporate Services to be plug-in segments compliant with the Defense Information Infrastructure (DII) runtime environment. For GCCS 3.0 and future DII-based C4I systems, the JDISS program will be packaging Corporate Services as JDISS mission applications segments.

JDISS Multmedia Collaborative Manager (MCM) is a set of applications which provides an integrated suite of multimedia tools, including desktop video teleconferencing, digital secure voice communications, a shared Web browser, a shared Whiteboard, shared text editing, a broadcast Powerpoint slideshow viewer, and other functions. JDISS MCM makes it easy for a group to collaborate on and switch back and forth between audio, video, text, and imagery subject matter. This capability will be comprised of several component segments including the existing JDISS Video segment.

Digital Camera Interface provides software drivers and a user interface allowing connection of a KODAK DCS 200 or 400 series digital camera to a workstation. This allows snapshot imagery to be uploaded directly to the workstation.

Matrix is a high-end GOTS imagery display and manipulation program.

5D Client is a legacy client interface to 5D imagery servers.

Coliseum (Client) provides client software for Coliseum RFI (Request for Information) servers.

ALE (Aires Life Extension) Client provides client software to interface with DIA's ALE server.

CRMA (Collections Requirements Management Architecture) is a legacy collections planning client program. Upon IOC of the JCMT, a client interface for JCMT servers will replace this corporate service.

Interactive Planning and Analysis (IP&A) is a classified tool for collections planning.

Oilstock is an NSA-developed mapping tool used to store, track, and display near real time and historical data over a high-resolution map or image background.

NRTD (Near Real Time Dissemination) provides SIGINT tactical data feeds which can be displayed using Oilstock.

JATACS (JDISS Advanced Tactical Cryptologic Support) SIGINT Tools including:

Adversary - Nodal analysis tool used for mission planning
Sensor Harvest - C2W decision aid interface to biographical country studies DB
F3S (Field Site Support System) - Interface to Carillon Database
NTSS-JDISS Bridge - Near real time feed & display of Klieglight reports
WEST (Wrangler Exploitation Software Tool) - Interface to Wranger Database
Sensor Mace - Air Force SCI data analysis tool
Sensor Phoenix - C2 database
IMOM (Integrated Many on Many) - Ingress / egress route planning tool.
Tinman - NSA Traffic analysis tool
Operational PROFORMA Trainer - Training for operational PROFORMA
Binocular - Data filter and alerts for NRTD
RFMP (Radio Freq Mission Planner) - RF propagation analysis
What If, Waterfall, Teams - Nodal analysis tools

TCAC (Technical Control and Analysis Center) SIGINT tool set developed by the USMC.

JEAP (Joint ELINT Analysis Program) provides a set of real-time ELINT message processing, storage, correlation, and analysis tools. In addition to real-time processing, JEAP provides access to the DIA JEAP and NSA Wrangler databases. JEAP will transition to Gale Lite Ver 4.0.

Frameviewer is a COTS product by Framemaker to view documents written in Framemaker.

Framemaker is a COTS electronic desktop publishing package for creating and viewing complex documentation.

JWICS Scheduler provides terminal emulation interfacing to the JWICS scheduling system.

XLamps enables JDISS users to possess USACOM LAMPS functionality.

XLaunch Manager is the automatic applications launch from USACOM.

*XPrint Manage*r prints desired files to USACOM's network printers.

XStairs facilitates STAIRS queries on USACOM IDHS.

EUCOM Conversion Utility is a numeric conversion utility for distance, latitude / longitude, metric system, etc.

2.1.5 JDISS Optional COTS Segments

Optional commercial products are available as JDISS plug-in segments which can be requested from the JDISS Program Office. Proof of purchase of the requisite COTS license will be required. Typically these products are purchased off the DIA SASS contract (See Section 2.5).

TEEM-X 4207 (Pericom Software, Inc.) is a terminal emulation package which provides DEC VT100/VT220 and TEKTRONIX 4010, 4014, and 4111 graphics terminal emulation. As an example, VT220 emulation, allows access to systems such as the DSNET3 Network Support Center Mail Host and CATIS. The combined VT220 alphanumeric and TEKTRONIX 401x graphic emulators allow access to the Defense Intelligence Threat Data System (DITDS) on the SOCOM SOCRATES network.

CorelDRAW Version 3.0 (CorelDRAW Inc.) provides a high-end graphics capability to produce publication quality graphics for documents, and allows for the import and export of various graphic formats.

Imagine provides a high end imagery manipulation capability.

Soft Windows provides an emulated Microsoft Windows run-time environment to run DOS/Windows applications on a Unix workstation.

Interleaf World View Press provides a high end electronic document publishing package. The baseline COTS package provides a viewer for documents produced using this package.

ARC INFO is a geographic information system package providing a mapping capability with interfaces to allow other applications to plot data on these maps.

Panorama provides a virtual window manager.

2.1.6 JDISS Server and Client Segment Dependencies

MOTIF 1.2.4 is the underlying windows manager in the GCCS COE. It is necessary to support the JDISS segments as well as most other segments in GCCS.

ApplixWare Version 3.2 or 4.X (Applix, Inc.) is a COTS software suite which provides an integrated set of E-mail, Document, Spreadsheet, and Graphics applications. Applix Word is a full-featured word processing program that can import graphics and spreadsheet files from the other Applix components. Documents created in this way can be attached to Applix E-mail notes for dissemination. The JDISS Server and Client

Segments are dependent on the presence of the GCCS Applix segment for many functions.

Netscape Version 1.1 or 2.X (Netscape Inc.) is a COTS Web Browser which is used to query the many Web sites (servers) on various networks. It allows a user to browse html-formatted documents and perform a variety of functions which are still evolving in Web technology. The JDISS Intelink and JUIC functions are dependent on the presence of the GCCS Netscape segment.

2.2 File System and NFS Requirements

The JDISS Server Segment is installed on a GCCS Applications Server in a local area network environment. The JDISS Server segment itself requires approximately 400MB of disk space, however additional space is recommended to support future growth in available JDISS corporate services and/or optional products. The JDISS Client segment requires about 30MB of storage space on each client workstation that will need JDISS functionality. The GCCS JDISS Clients must be able to communicate with the JDISS Server segment at near Ethernet speeds (i.e. 10Mbps) to properly support Network File System (NFS) client mounts of JDISS software on the server. Normally the Applications server also doubles as the JDISS license server (alias lmserver), however if required, JDISS licenses can be supplied by a remote server located anywhere in the LAN or WAN environment. (The Systems Administration chapter of this document provides details about license management and reconfiguring for remote distribution of JDISS licenses.)

2.2.1 JDISS Filesystems

Figure 2.2.1-1. ***File Structure for JDISS Applications***

2.2.1.1 Filesystem for /h/JDISS/

Permissions	Owner	Group	Description
drwxr-xr-x	root	daemon	*desktopCHATTER* contains the software for the chatter capability to use chatter, talk and DITDS chat.
drwxr-xr-x	root	daemon	*elt2k* lists the software to load and run the Electronic Light Table imagery package.
drwxr-xr-x	root	daemon	*hippie* has the Vividata software to interface to a variety of printers and scanners. (GCCS 2.2)
drwxr-xr-x	root	daemon	*iwv*, the interleaf worldviewer contains software to view documents created in Interleaf.
drwxr-xr-x	root	daemon	*intelink* contains the Mosaic link to access intelligence databases dependent upon which network connection the system uses.
drwxr-xr-x	root	daemon	*ivox* contains the secure voice software developed by the Naval Research Laboratory for using secure voice.
drwxr-xr-x	root	wheel	*ixi* is the X.desktop software for JDISS window management.
drwxrwxr-x	root	wheel	*sass* contains the sass license software necessary to run COTS products purchased from the DIA SASS contract.
drwxr-xr-x	root	daemon	*slip* provides the software necessary for accessing STUIII connectivity. (GCCS 2.2)

drwxr-xr-x	bin	daemon	*synchronize* software manages the calendar for JDISS.
drwxrwxr-x	root	daemon	*tn3270* provides the terminal emulation for IBM systems.

2.2.1.2 Filesystem for /h/JDISS/data/share

Under the /h/JDISS/data/share directory additional subdirectories reside which can store appropriate data "dropped in" via the Share Drop Target. Files are placed in the appropriate directory depending on file extension. The subdirectories are:

Documents	Images	Video	Text
Other	Audio		

NOTE: DO NOT remove *.(filename)* files. These are generally system files, and may have catastrophic consequences if they are removed or altered.

2.3 EMail

Shared email is local to each workstation. An alias is set in the /etc/aliases file to point the shared email to /h/JDISS/data/share/sharespool. Mail to the shared user at a particular machine is redirected to the local share directory.

2.4 Corporate Services

Corporate Services are auxilliary COTS and GOTS packages that either the JDISS program or a site has configured to operate in the JDISS software environment. The JDISS program maintains packaging control of certain applications that have widespread use in mulitple theatres; these are called Registered Corporate Services. Theatre unique and site unique applications are usually created and maintained externally from the JDISS program, although these can evolve to become Registered Corporate Services. For GCCS 3.0 and future DII-based C4I systems, the JDISS program will be packaging certain Corporate Services as new mission applications segments.

2.5 JDISS Software Licensing Scheme

A software licensing mechanism is provided in the JDISS baseline to provide COTS licensing support, and to provide a means to exercise centralized configuration management and software distribution control. This section describes its function and required supporting files. JDISS license management is an implementation of the COTS product FlexLM, of Globetrotter Software Inc.

2.5.1 JDISS and SASS License Relationship

The standard JDISS workstation used throughout the Intelligence community and the JDISS Segments for GCCS, JMCIS, and other systems are all similar in that they are based on a common set of core COTS and GOTS applications. All of the JDISS 2.0 COTS applications must be procured from the DIA SASS contract in order to maintain configuration and license management consistency. SASS (Systems Acquisition Support Services) is a Defense Intelligence Agency (DIA) contract managed by DIA S-04. JDISS software falls under the CSE (Client Server Environment) portion of the contract. The JDISS 2.0 license mechanism includes SASS licensing support and meets SASS contract requirements. In effect, JDISS COTS applications are controlled simultaneously by both a JDISS license as well as a SASS license. JDISS GOTS applications are only controlled by the JDISS license. Of the two, only the JDISS license needs to be created for a specific site. The SASS license is generic for any site and is provided on the JDISS load tape.

2.5.2 Required SASS Licenses for JDISS 2.0 and JDISS 2.0 Segments

The below-listed SASS COTS Products are required for JDISS. It is important to understand that only the first two of the products listed must be bought for every server and every client workstation. The remaining products may be quantified based on projected *concurrent usage* for a site server. You do not need to procure dedicated copies of every product for every workstation. Actual software quantities procured should be based on the number of intelligence personnel expected to use the JDISS Segment at the same time. And since imagery represents a major portion of the cost of JDISS software, the quantity of imagery software procured (ELT 1000/2000) should closely match actual *concurrent* imagery usage required at your command.

SASS COTS Software Required for the GCCS JDISS Segment

Product	Quantity Per Site Server	CLIN
X.Desktop	1 req'd for each server and client	0401AF
Desktop Chatter	1 req'd for each server and client	1801AA
TN3270	As req'd for site's concurrent usage	0801AD
Synchronize	"	0901AF
Worldview	"	2001AE
ELT 1000	"	1501AD
ELT 2000	"	1501FA
ImageExch PIX	Min of 1 recommended per server	1501MB

2.5.3 Licensing the JDISS 2.0 Baseline Software

A JDISS license file is generated for a designated JDISS License server and tied to the server's hostname as well as the hostid. Although the hostname of the original server can be changed, the license file cannot be moved freely to a different server (even if named the same). A SASS license file is hostid independent and can be moved from platform to platform, however the hostname will need to be updated in the file. JDISS client workstations do not need to be individually licensed. (A client workstation checks out licenses from its server.) While the server name in both the SASS and JDISS license files can be changed locally, the hostid in the JDISS license (which is unique for every Sun workstation) cannot be changed. This makes it impossible to move or replicate JDISS-distributed software to other (or multiple) servers without obtaining appropriate COTS licenses. Hewlett Packard machines do not have hostid's, so the Ethernet hardware address (not IP address) is used instead.

Since the JDISS license is used as a central configuration management tool, only the JDISS Program Management Office (PMO) has the ability to generate a JDISS license. Contact the GCCS HOTLINE (703) 735-8681; DSN: 653-8681 for information on obtaining a license. (General information about JDISS Licenses can be obtained from the JDISS PMO Hotline (301) 669-5100; DSN 659-5100.) Without a license, JDISS will not start up even though the Icon appears on the GCCS desktop.

2.5.4 The JDISS License File

The format of the JDISS license file is:

SERVER (*machine name*) (*hostid*) 7337
DAEMON jdiss /h/JDISS/progs/Solaris/jdiss
FEATURE (*feature name*) jdiss 1.000 (*expiration date*) (*number of license features*) (*encrypted license key*) ""

> **NOTE:** Path shown above applies to GCCS JDISS Segments only. JDISS Daemon paths for JMCIS, Standalone JDISS, and other systems vary. The values in "()"'s will change for each installation. Normally there will be only one SERVER and one DAEMON line per JDISS license file. There will be multiple FEATURE lines - one for each application.

The following applications can be found as FEATURES embedded in the JDISS license, depending on which optional products are purchased:

nvdet	pings	backup	dostools	diskstats
deviceAdmin		alertserv	alert	sendConfig
sendfile	siteconfig	ftp	Banner	changeClass
sunclock	shutdown	tn3270	HostTool	CDumount
CDmount	emulation	Shared_Email		SLIP
SoftWindows		applixmail	applixss	applixword
applixgr	arctools	arcview	browserm	cat2

chatter	corelchart	coreldraw	corelpaint	elt1000
engine_ctl_SPARCprinter		engine_ctl_SPARCprinterII		
engine_ctl_HP		ileaf	ileaf6	imagine
iview	ivox	rdmx	synchronize	tn3179g
xdt3	license	xteemx320	decrypt	

The following applications do not apply to the GCCS JDISS Segment, although the icons may remain on the system for future development:

- Digital Camera
- CDROM mount
- Collage
- Hippie
- Shutdown
- Set Password
- XMIT
- Slip

2.5.5 Obtaining / Installing a JDISS 2.0 License

A brief overview of the steps needed to obtain and install a license is provided below. Further details are provided in the System Administration chapter of this manual:

1. Contact the GCCS Hotline or CM Office (license distribution manager) to get information on obtaining a JDISS license. Be prepared to provide your server's machine type, hostname, hostid (for Sun's) or Ethernet LAN0 hardware address (for Hewlett Packard machines), and desired quantities of software licenses. If you have already completed a SASS software procurement, you will be required to fax a copy of your SASS delivery order to the GCCS PMO to verify that your site has procured the quantities of the applications you wish to have activated by the JDISS license. The GCCS PMO will then task the JDISS PMO to create your license.

2. The JDISS PMO will provide you with a license file that must be copied to your server. On a GCCS server, the file resides in /h/JDISS/etc/license.dat

3. Install the JDISS Server and Client segments if not already installed.

4. Verify the license file has the correct hostname, hostid, and software quantities in the Feature lines. Verify it is stored as "license.dat" as /h/JDISS/etc/license.dat.

5. Reboot the server. When a JDISS workstation reboots, it attempts to verify the license. If the license has not been obtained or was installed in the wrong place / misnamed, or if the workstation doesn't know "who" its license server is (lmserver), a message similar to the the following will appear during JDISS boot:

"Checkout decrypt: Cannot find license file"

2.5.6 JDISS License Manager (LM) Operation Overview

The JDISS License Manager (LM) is an implementation of FlexLM (TM) of Globetrotter Software Inc. FlexLM software is implemented in the standard JDISS as well as the JDISS Segments found in other systems such as GCCS (Global Command and Control System) and JMCIS (Joint Maritime Command Information System). The JDISS License Manager provides controlled access to the main executables (binaries) of software applications, and monitors their usage. At boot time, in JDISS_boot, the FlexLM license manager daemon (lmgrd) is started. It continues to run at all times in the background. Applications that need to be license-controlled will have an embedded FlexLM library call, which establishes communication with the lmgrd daemon and requests a license to be checked out. Normally FlexLM calls are embedded in the application binary itself, through a process called "wrapping". This is the case for licensed GOTS applications for which source code is available to JDISS.

2.5.7 JDISS Encryption

In the deployable releases of JDISS as well as the JMCIS and GCCS JDISS segments, JDISS COTS binaries are both licensed and encrypted. In effect, JDISS goes a step further than the FlexLM convention in protecting core COTS applications. Encrypted JDISS binaries checkout licenses differently than the unecrypted ones. Instead of the FlexLM calls being embedded directly in the application binary, they are embedded in the JDISS_decrypt1 and JDISS_decrypt2 programs as illustrated in Figure (1). The first 8KBytes of a core JDISS COTS binary are encrypted through a process that breaks the binary into three pieces, the first two of which are encrypted 4KByte blocks. This is done when a JDISS release is built prior to fielding. As shown in figure (1), the JDISS_decrypt1 program is symbolically linked to the name of the application. It therefore is aware of which application needs to be decrypted and licensed. JDISS_decrypt1 decrypts the first 4K of the application binary and calls the SASS *license* program to check out the appropriate SASS feature (if the application is a SASS product). The embedded FlexLM code then holds execution until it receives a successful license check-out signal from the SASS lmgrd daemon. Upon successful completion of JDISS_decrypt1, the JDISS_decrypt2 program is called which decrypts the second 4K of the binary and performs a checkout of the JDISS license.

2.5.8 Wrapping Applications for License Control

As described above, encrypted JDISS COTS applications are launched through execution of the JDISS decrypt program which contains an embedded FlexLM library call. In effect, the decrypt program is told by a successful FlexLM checkout that it has permission to decrypt and execute the application selected by the user. Since the FlexLM library call is not embedded in the application itself, this scheme allows secure

license control of applications for which source code is not available. This is the key difference between the JDISS implementation of FlexLM and the conventional case where the FlexLM call is embedded within the source code of an application. The JDISS case also differs from the FlexWrap and SASS licensing implementations. Although both are supported by JDISS, they are not as secure. These implementations perform a FlexLM license checkout through an external launcher program which is used to launch an unprotected (non-secure) copy of the application binary. Currently, if other segment developers wish to use the JDISS LM scheme they will need to provide their application binary to the JDISS PMO for encryption and testing to ensure the application decrypts properly and executes. In addition, every "JDISS-wrapped" application must have a feature entry in the JDISS license.dat file. The feature entry defines the application, expiration date, number of licenses, and includes an encrypted string which contains the same information plus the server hostid.

2.5.9 Systems Acquisition Support Services (SASS) LM Operation Overview

The JDISS LM includes support for running software procured via the DIA SASS contract. SASS, like JDISS, used FlexLM from Globetrotter Software, Inc. as the development environment for the SASS License Manager. However, the SASS FlexLM implementation differs from JDISS in that it is primarily a logging mechanism. The SASS license is not normally used to restrict software distribution / server installs. The SASS license in intentionally platform, location, and user independent. For SASS, FlexLM is used to maintain a special encrypted log file that is required to meet the terms of the SASS contract. Similar to the standard FlexLM log, this records the high-water mark for the number of concurrent users of each SASS application. The file is encrypted to ensure the validity of the data.

2.5.10 License Logs

The responses to all JDISS license requests are logged in the /tmp/lmgrd.log file and can be used to monitor application usage. This file gets overwritten with each reboot. An additional log keeps track of SASS product usage; /h/JDISS/sass/log/license.log. The SASS daemon also records SASS product usage in encrypted logs stored in the /h/JDISS/sass/log directory. The encrypted files are named according to the server's name with a numerical month extension. Periodically it may be necessary to forward copies of these logs to the SASS contract office at the Defense Intelligence Agency. Also, since the SASS logs do not get overwritten with each reboot, the System Administrator should periodically archive them to tape for disk space management.

2.5.11 JDISS Background Processes

The following background processes are started by the JDISS_boot script (stored in /h/JDISS/Scripts directory) at system boot time:

ttsession (Supports the ELT imagery application)

chatterd (Supports Desktop Chatter)
chatmastd (" " ")
chataream (" " ")
synchrod (Supports the Synchronize calendar scheduler program)
JDISS_alerterv (Supports the JDISS Alerts program)

In addition to the above processes, the JDISS Server Segment runs background processes to support license management:

lmgrd (Two copies: one for the SASS license and one for the JDISS License)
sasslmd (The SASS license daemon)
jdiss (The JDISS license daemon)

Normally the System Administrator should not need to modify the JDISS_boot script.

3. JDISS SEGMENTS INSTALLATION AND SYSTEM ADMINISTRATION

3.1 JDISS Segments Installation

This section addresses installation, post-installation, and routine system administration of the GCCS JDISS Server (JDISS) and Client (JDISSC) Segments. The JDISS Server Segment is normally installed on the GCCS Applications Server in a local area network environment. It stores the bulk of the JDISS COTS and GOTS applications that are used for JDISS. The JDISS Client Segment is installed on any GCCS workstation requiring Intelligence functionalities. It was designed for use in a Local Area Network environment where it can communicate with its corresponding server at or near Ethernet speed (10Mbps), preferably on the same subnet. The server can be located on a different subnet, and across multiple routers, but Ethernet speed access must be possible. JDISSC was designed therefore to conserve disk space on client workstations by NFS-mounting most JDISS applications from the server. NFS (Network File System) mounts are usually not good for mounting and executing large applications across Wide Area Networks and/or at non-Ethernet speeds.

3.1.1 Installation via SAInstaller

Both the JDISS Server Segment (JDISS) and JDISS Client Segment (JDISSC) are installed using the GCCS SAInstaller program. The JDISS SegDescrip files will define the JDISS environment, modify community files required and create the JDISS Icon on the GCCS desktop. SAInstaller invokes "PostInstall" (/h/JDISS/SegDescrip/PostInstall) which performs most Post Installation tasks automatically. Upon completion, the System Administrator should check the install log file and then reboot the system. Upon reboot, the System Administrator must log in as SECMAN and activate the JDISS option. After running SAInstaller, some steps still must be performed manually by the System Administrator as described in the following section.

3.2 JDISS Segments Post-Installation and Routine Maintenance

3.2.1 License Installation and Administration

3.2.1.1 Required License Files for JDISS

There are two license files required for the JDISS Segments to operate, the JDISS license itself and the SASS (Systems Acquisition Support Services) COTS products license. Both are installed in the JDISS Server Segment. The SASS license is distributed on the JDISS Server Segment load tape and normally requires no changes or updates after running SAInstaller. (Its presence is required to be compliant with the terms of the SASS contract under which the JDISS COTS licenses are purchased.) The JDISS license

on the other hand is distributed separately and is created for a specific server and quantity of licenses. JDISS licenses are typically distributed from the GCCS Home Page server maintained by DISA on the SIPRNET. The JDISS license must be installed manually by the System Administrator as follows:

3.2.1.2 JDISS License Installation and Alteration

JDISS License files are distributed to GCCS sites through placement on the SIPRNET GCCS Home Page server at the DISA Operational Support Facility (OSF). Contact the GCCS Hotline or CM Office for information on obtaining a JDISS license. A license file should only be installed on the host (or server) that is named in the first line of the file. Some sites may receive multiple license files for different hosts. It is important to understand that a JDISS license file can only be installed on the host (or server) it is intended for. Client workstations will automatically check out licenses from a designated server and check them back in when done. This allows application licenses to float among client workstations based on actual need and usage. The hostid (for Sun Workstations), software quantities, and expiration dates are all encrypted in the JDISS license.dat file and cannot be altered in the field.

File Name: The license files are distributed as small ASCII text format files which are named according to their designated server (i.e. a hostname). Once copied to the appropriate server, the name of the license file must be changed to **license.dat**.

3.2.1.3 JDISS License Installation

Copy the license file you received to a working directory on the server and rename it from "hostname" to license.dat. Cat or view the license with vi to verify the hostname and hostid are correct for the server you are installing it on.

Copy the license.dat file to /h/JDISS/etc as follows: cp license.dat /h/JDISS/etc

Reboot the machine upon completion of remaining post-installation tasks, or perform the procedure described in paragraph 3.2.1.5 to restart the license services.

3.2.1.4 JDISS License Alteration

If the lmserver machine must be changed to different hardware, a new license file must be obtained from the JDISS PMO via DISA GCCS CM. If the lmserver machine just needs to be renamed, a System Administrator can perform a name change in the license.dat file without obtaining a new license as follows:

cd /h/JDISS/etc

vi license.dat - On the first line of this file, change "oldhostname" to the new name of this host. Save the file and exit vi.

Reboot the machine or perform the procedure described in paragraph 3.2.1.5 to restart the license services.

3.2.1.5 Restarting License Services

Normally to restart the JDISS license processes, a reboot of the server is performed. However, in cases where the server cannot be taken down for a reboot, the following manual procedure can be used to halt and then restart JDISS and SASS license services.

Warning: Ensure no users are running any JDISS applications, otherwise they may lose JDISS functionality when existing license processes are terminated. The following procedures require root access and should only be carried out by a qualfied GCCS System Administrator.

Open a C shell xterm window
su to root

Begin by terminating any existing license processes (or daemons) for JDISS and SASS as described below. There are normally four of them. You may find that some or all of the processes may not be running; if so proceed until all four are verified to be shut down.

Identify process id numbers (pid's) for the lmgrd processes supporting jdiss and sass.

```
ps -efa | grep lmgrd
```

Look for the pid's for the lmgrd processes that have jdiss and sass for their license files. Be careful as there may be other lmgrd processes supporting other segments. The ones for jdiss and sass have jdiss and sass license files identfied in their command lines (e.g. /h/JDISS/etc/license.dat and /h/JDISS/sass/license/license.dat).

Kill the processes identified above:

```
kill -9 pid (pid for the lmgrd daemon for jdiss)
kill -9 pid (pid for the lmgrd daemon for sass)
```

Identify pid for the sasslmd daemon:

```
ps -efa | grep sasslmd
```

Take the pid number for the sasslmd daemon and kill it.

```
kill -9 pid (pid for the sasslmd daemon)
```

Identify pid for the jdiss daemon:

```
ps -efa |grep jdiss
```

Take the pid number for the jdiss daemon and kill it.

```
kill -9 pid (pid for the jdiss daemon)
```

Once any existing JDISS and SASS daemons are shut down, you may proceed to restart new instances of them as follows:

```
setenv JDISS_HOME /h/JDISS
setenv SASS /h/JDISS/sass
```

Start the JDISS license manager:

```
$JDISS_HOME/progs/Solaris/lmgrd -c $JDISS_HOME/etc/license.dat -l /tmp/lmgrd.log &
```

Start the SASS license manager:

```
$SASS/bin/Solaris/lmgrd -c $SASS/license/license.dat -l $SASS/log/license.log &
```

Note: You do not need to manually restart the sasslmd and jdiss daemons. These are automatically spawned when the lmgrd daemons above are started.

3.2.1.6 Alias "lmserver" Configuration

There must be an alias in the server's /etc/hosts file called "lmserver" which points to the host that will be the JDISS license manager server (i.e., host where the JDISS license file is installed). Normally the "lmserver" alias is set during the GCCS kernel installation. This alias must be propagated throughout the Network Information Service (NIS) environment for client workstations to be aware of who the lmserver is. If NIS is not implemented, then each client must have the alias in their local /etc/hosts file as well as the server. If in doubt, ping lmserver to see if the alias is properly set.

3.2.1.7 Configuring for Use of an Alternate License Server

Some sites have a requirement to use a license that resides on a server on a different subnet or at some distant point. The fact that the JDISS Client Segment NFS-mounts applications from a local server running the JDISS Server Segment should not be construed to mean that JDISS license support must always come from that same server. JDISS licenses can be checked out from a different JDISS Server on a different subnet or across a Wide Area Network (and at 9.6Kbps speeds). For example, a headquarters site may wish to allow a remote site to "feed" off its supply of software licenses. To do this, a JDISS Server Segment must be installed at both the headquarters and the remote site, however the remote site server has no licenses; it points to the headquarters server anytime it needs to check out a license. In effect, this allows the clients at the remote site to rapidly mount and execute JDISS applications from their own server while checking out licenses from the server at headquarters. During operations, users may note a slight delay on applications launch while waiting for a license request to be serviced and communicated from the headquarters server to the remote site.

Configuration steps for use of an alternate JDISS license server:

1. ____ Verify that the source server ("headquarters") is up and the JDISS Server segment is installed there and tests operational. The system administrator at the source site should be aware of the remote site's desire to use some of their JDISS licenses. Communications tests should be done to ensure the servers at both sites can ping each other(by hostname) without lengthy transmission delays.

Note: In some cases, lengthy transmission delay has been observed to exceed the timeout limits of the current license manager. This problem will be addressed in the next release.

2. ____ Remote site reconfigures its NIS+ environment (and/or Apps Server /etc/host file) to alias "lmserver" (see Sec. 3.2.1.5) to the "headquarters" server instead of its own JDISS Server. Reboot and test JDISS segment operations. If successful, proceed with modifying JDISS Clients as described in step 3 below. If unsuccessful, restore the lmserver alias to its original host; a local JDISS license file will be required.

3. ____ Remote site reconfigures each JDISS Client as follows. Edit the /etc/auto_jdiss file to change all instances of "lmserver" to the actual hostname of the local Apps Server running the JDISS Server segment. This will ensure the clients perform NFS mounts on the local JDISS Server segment vice the distant one at the "headquarters" site.

3.2.1.8 SASS License Alteration

The SASS license is distributed on the JDISS Server Segment load tape and normally requires no changes or updates after running SAInstaller. Unlike the JDISS license, the SASS license can be moved from one server to another without obtaining a new license. However, the license file must be updated by the System Administrator if such a move takes place.

cd /h/JDISS/sass/license
vi license.dat - On the first line of this file, change "oldhostname" to the new name of this host. Save the file and exit vi. Reboot the machine or perform the procedure described in paragraph 3.2.1.5 to restart the license services.

3.2.1.9 License Logs

The responses to all JDISS license requests are logged in the /tmp/lmgrd.log file and can be used to monitor application usage. This file gets overwritten with each reboot. An additional log keeps track of SASS product usage; /h/JDISS/sass/log/license.log. The SASS daemon also records SASS product usage in encrypted logs stored in the /h/JDISS/sass/log directory. The encrypted files are named according to the server's name with a numerical month extension. Periodically it may be necessary to forward copies of these logs to the SASS contract office at the Defense Intelligence Agency.

Also, since the SASS logs do not get overwritten with each reboot, the System Administrator should periodically archive them to tape for disk space management.

3.2.1.10 License Error Handling

Boot time errors of the license manager are written to the file /tmp/LM_boot.log. Common errors include:

1) A missing license file - license file not present in:
/h/JDISS/etc/license.dat (JDISS License)
/h/JDISS/sass/license/license.dat. (SASS License)

If the JDISS license is missing, one must be obtained via the GCCS CM office and installed per paragraph 3.2.1.3. The SASS license is included in the JDISS Segment load tape and gets installed as part of the JDISS Server segment. Following installation or change of these files, you must reboot the license server or restart the license processes as described in paragraph 3.2.1.5.

2) Incorrect JDISS license file. (Most likely cause of licensing problems.)

```
cd /h/JDISS/etc
vi license.dat
```

Verify hostid, hostname, and feature expiration dates. You can adjust the hostname if necessary, however a new license file must be obtained to update the hostid and/or expiration dates. If only one or two features are failing to checkout, it is possible that the corresponding encrypted string(s) may be incorrect; this is common for administrators who type this file in by hand. That possibility can only be verified through visual comparison or replacement with a license file known to be valid. If the JDISS license file is changed or replaced, you must reboot the license server or restart the license processes as described in paragraph 3.2.1.5.

3) Incorrect SASS license file. (Normally requires no attention)

```
cd /h/JDISS/sass/license
vi license.dat
```

Verify proper hostname is in the SASS license.dat file. If incorrect or the file is not present, e.g. only a license.dat.proto is present, perform the following:
cp license.dat.proto license.dat
vi license.dat - On the first line of this file, change "XXXHOSTXXX" to the name of this host. Save the file, exit vi, and reboot the license server or restart the license processes as described in paragraph 3.2.1.5.

4) "lmserver" alias not set in /etc/hosts (or NIS yphost map). "lmserver" aliased to nonexistant machine, or to wrong machine.

5) Socket or TCP port errors - another application is using the license manager or sass TCP port or the attempt was made to start the license manager after it was already running. Port assignments can be altered in the license.dat files if necessary without obtaining a new license. Remember that following any change in these files, you must reboot the license server or restart the license processes as described in paragraph 3.2.1.5.

6) Desired product not licensed, or license expired. (Check license.dat files)

3.2.2 Configuring Access to Intelligence Servers

3.2.2.1 Configuring Intelink and JUIC

The Intelink and JUIC (Joint Universal Imagery Client) functions are currently implmented through calls to the GCCS Netscape Segment). A manual Post Install procedure may be done to set the URL's (Uniform Resource Locator addresses) for Intelink and JUIC to other than the default SIPRNET servers. To change these URL's, a System Administor must perform the following:

cd /h/JDISS/data/IXI/Icons/Intelink.obj
vi activate - On the line that begins with WWW_HOME, change the URL http referencefrom "//seawolf.nmic.navy.smil.mil/jdiss/jdiss.html" to "//any_desired_site.smil.mil"
Save the file and exit vi.

cd ../JUIC.obj
vi activate - On the line that begins with WWW_HOME, change the URL http referencefrom "//ipa.acom.smil.mil" to "//any_desired_ipa_server.smil.mil"
Save the file and exit vi.

3.2.2.2 Configuring Remote Services

The Remote Services icon will bring up a Terminal Emulation tool which will allow you to connect to hosts that were configured for terminal emulation in the JDISS Manager. Section 3.2.4 describes how to use JDISS Manager; you will need to select which type of terminal emulation you wish to associate with a given host.

3.2.3 JDISS Alerts Configuration

Note: This procedure should only be necessary for older releases of the JDISS Server and Client segments or for Beta copies of the current release. For the JDISS Alert function to interoperate with its counterpart in the standard JDISS 2.0 workstation and other non-GCCS platforms, the inter process communications port number must be properly set. This can be verified as follows:

Edit the /etc/services file using vi or another text editor

Find the portion of the file for "JDISS daemons"

Check the jdissAlerts line, it should read as follows:
jdissAlerts 15232/tcp

Older releases had 5233 as the port number; change to read 15232 as shown above.

Save the file and exit the editor

3.2.4 Configuration of jdhosts using JDISS Manager

The JDISS Manager function, available from the JDISS Utilities desktop, is an interface to maintain the **jdhosts** file (/h/JDISS/etc/jdhosts). A jdhosts file is present on every GCCS machine that has either JDISS Server (JDISS) or JDISS Client (JDISSC) installed. This file contains hostnames, IP addresses, aliases, desired functions, and terminal emulation types, identifying remote systems for JDISS interoperability. Proper maintenance of the the jdhost file using JDISS Manager is required for your workstation to interoperate with JDISS applications installed on other GCCS, JMCIS, or JDISS workstations. The JDISS Manager user interface is shown below in figure 3.2.4-1.

Upon first use of the JDISS Manager program, the jdhosts file is automatically primed with the hosts contained in the local /etc/hosts file, however no functions or terminal emulation types will be activated; i.e. the default is no associated JDISS functions. Therefore one must use the JDISS Manager to associate desired JDISS functions with desired hosts. Additional hosts may also be added to the jdhosts file using this program.

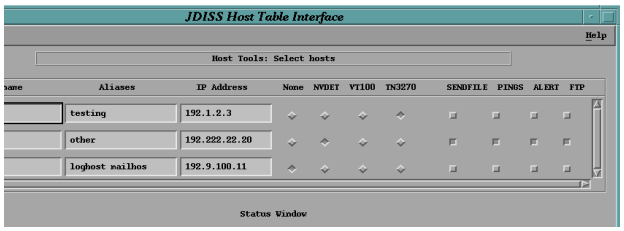

Figure 3.2.4-1. ***JDISS Host Table Interface Window***

It is important to understand that *in GCCS*, host additions, deletions, or changes performed via JDISS Manager only affect the jdhosts file. JDISS Manager does not touch the system /etc/host file nor does it alter the NIS / NIS+ environment in any way. This differs from the standalone JDISS workstation implementation of JDISS Manager.

3.2.4.1 jdhosts Field Definitions

The format of this file is as follows:

(1) Hostname
(2) Aliases ... can be more than one
(3) IP address
(4) Terminal Emulation type: A choice from None, NVDET, VT100, or TN3270.
(5) Sendfile
(6) Pings
(7) Alerts
(8) Ftp

Each field of the file is separated by a tab character. The JDISS Manager is provided to update and modify host tables for JDISS, CSE, and Unix.

Description

Hostname - The name that the operating system has assigned to the machine. Value returned from the command 'hostname`.

Aliases - Alternate names for the defined host. Each name should be separated by spaces with no more than 30 total characters in the field including spaces.

IP address - The number of the form XXX.XXX.XXX.XXX as assigned by the network administrator that uniquely identifies this host on the network. Maximum numeric value is 255.

Terminal Emulation - Emulates alternate system protocols; tn3270 emulates IBM, nvdet emulates GOTS package, vt100 emulates smaller screen.

Sendfile - Toggle switch "on" to enable sendfile capability to a particular host.

Pings - Toggle switch "on" to enable ping capability to a particular host.

Alerts - Toggle switch "on" to enable alert capability to a particular host.

Ftp - Toggle switch "on" to enable ftp capability to a particular host.

Pull down menus

The pull down menus from the JDISS Manager provide important functions to the JDISS administrator.

The File pulldown contains the following options:
Insert Host
Remove Host
Update Host Tables - JDISS Host Table
Quit

Note: In GCCS it is normal to get an NIS update error message upon completing the Update Host Tables procedure. This is due to JDISS Manager being restricted in GCCS to only updating the jdhosts file. Since it can't modify the NIS maps, the program sends an error message.

The Sort pulldown contains the following options:
Hostname
IP Address

3.2.5 Configuration of the Synchronize Application

Synchronize maintains a users file that contains a list of all the users that can access the software. When Synchronize is initiated, the users file is scanned for the current user. If that user does not exist, it is added to the file. The problem is that this update to the users file does not take effect immediately. The user will get this message in a window: "Your login name is not in the Synchronize users file. Please ask the Synchronize administrator to add you to the users file." The user has in fact been added but Synchronize does not recognize it yet. This is a bug in Synchronize and the workaround is as follows:

The system administrator needs to do a "ps" and search for the process called "synchrod" and kill it. The process will automatically re-start and read the updated users file. The user will now be able to initiate Synchronize. This should be done as follows:

ps -ef | grep synchrod
kill -9 <synchrod process id>

Another workaround is to add all of the users to the Synchronize users file at one time and kill the "synchrod" process or re-boot the system. This would need to be done as follows:

cd /h/JDISS/synchronize/db

vi users - Go to the bottom of the file. For each user add "username, username" one user to a line. Example:
dave, dave
steve, steve
Save the file and exit vi. Re-boot the system or kill the "synchrod" process as described above.

3.2.6 JDISS Applix Office Automation Functions

A number of office automation functions in the JDISS Segments for GCCS are engineered to use the GCCS Applix Segment. The following functions in JDISS are dependent on the presence of the GCCS Applix Segment:

JDISS share E-Mail

Without Applix, the share E-Mail account will still be in effect, however there will not be an automatic pop-up window notifying the user that share E-Mail has arrived. Mail for share would have to be manually checked by other means if the Applix segment is not loaded on the system.

JDISS Print Target

Without Applix, the JDISS Print target will still work for generic text, postscript, and other file types that do not require filtering through an Applix application.

JDISS On-Line Documents

These files are in Applix format and require Applix Word in order to be viewed. They are stored in the /h/JDISS/data/Users_Guide directory.

3.2.7 Miscellaneous System Administration Functions

Backup & Restore provides tape backup control for both system and user files.

Screen Lock locks screen applications from outside access while the user steps away from the terminal.

Shutdown is not enabled for GCCS.

Trash removes files from the system.